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LU, CHARLES EDWARD

ART UNIT	PAPER NUMBER
2161	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
	10/623,621	SHIN, HYOSEOP	
Office Action Summary	Examiner	Art Unit	
	CHARLES E. LU	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>25 September 2008</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>54-89</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>54-89</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1. This Action is in response to the Remarks dated 9/25/2008. Claims 54-89 are
pending and rejected.

Response to Arguments

2. Applicant's arguments regarding the prior art-based rejections were fully
considered.

Applicant argues that it would not have been obvious to modify Evain to use
predetermined codes in lieu of string location expressions, because the secondary
reference, Kirk, is drawn to a different problem (Remarks, p. 2, middle). The examiner
respectfully disagrees.

It has been held that a prior art reference must either be in the field of applicant's
endeavor or, if not, then be reasonably pertinent to the particular problem with which the
applicant was concerned, in order to be relied upon as a basis for rejection of the
claimed invention. Emphasis Added. See *In re Oetiker*, 977 F.2d 1443, 24
USPQ2d 1443 (Fed. Cir. 1992). Both are in the same field of endeavor of data
structures, but, if not (which is not admitted by the Examiner), Kirk is reasonably
pertinent to the particular problem with which Applicant was concerned. Specifically,
the problem is, in a data structure, expressing a value as a (e.g., numeric) code, and
using the code instead of the value during processing for efficiency. This is the concept
that is relied upon in Kirk (e.g., col. 10, ll. 10-30).

Applicant further argues that the descriptor fields of the prior art (e.g., "section_id", "encoding_type") do not contain an encoded value that is either "a predetermined standard code" or "a predetermined location code" that indicates that the index list structure itself contains "a location of an expression specifying a location" as claimed. The examiner respectfully disagrees.

The examiner recognizes that both Evain and Kirk were combined to achieve the claimed subject matter (Prior Action, p. 3). Specifically, Evain teaches an index list structure and descriptor fields in general (e.g., "section_id", "encoding_type"), as well as encoding in general (e.g., "key_encoding_indicator"). Note that the descriptor fields are also encoded, generally. This suggests that Evain is capable of implementing additional kinds of encoding in its data structure. Furthermore, Evain teaches the claimed "standard fragment type specifying a location of the fragment" and "location of an expression specifying a location" (e.g., "fragment_xpath_ptr", "key_xpath_ptr").

Evain's predetermined "...standard fragment type..." and "...location of an expression..." mentioned above are not understood to be encoded with a code (see Prior Action, pp. 3-4), but is rather understood to be "raw data" (e.g., strings) for the purposes of the combination. Hopd on

Meanwhile, Kirk readily teaches encoding "raw data" (strings) with a standard code (e.g., 1 = Texas), and using the code (e.g., "1") instead of the string during processing, for efficiency (e.g., col. 10, ll. 10-30).

Thus, the end result of the combination would be a field (containing an encoded value), the encoded value being a predetermined location code, indicating that the index

list structure contains a location of an expression specifying a location of the fragment

(i.e., Evain's raw data is encoded with a value, much like "Texas" is encoded with "1",

and Evain would utilize the code instead of the raw data).   As such, the claimed subject

matter is considered to be met.

   Moreover, the end result of the combination would also be a field (containing an

encoded value), wherein the encoded value is a predetermined standard code assigned

to a standard fragment type (i.e., the raw data string of the fragment is encoded with a

value, much like "Texas" is encoded with "1") specifying a location of the fragment, and

is assigned according to a convention for specifying standard fragment types (i.e., "1" =

some XPath string). As such, the claimed subject matter is considered to be met.

   For at least the above reasons, the prior art-based rejection of the claims is

maintained.

   The broadest reasonable interpretation in light of the specification has been

applied to the claims, and limitations from the specification were not read into the

claims. See rejection below.

Claim Rejections - 35 USC § 103

   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

   3. Claims 54-89 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Evain (XP002323574) provided by Applicant, in view of Kirk et al (U.S. Patent

6,823,329).

As to claim 54, Evain teaches the following subject matter:

(i) Index structure for metadata divided into fragments, the index structure contained in a computer readable storage medium (e.g., fig. 2-3, 1.1.1,2.1.5, 2.2, 2.2.2, 2.2.4, 2.3);

A list of keys corresponding to fields of the metadata (2.2.2, 2.3.1.1, 2.3.2);

Location information for defining a key and locating and extracting a fragment of the metadata (see XPath section 2.3.1.1, 2.3.2, also see above).

Evain does not expressly teach,

(A) "wherein at least part of the location information defining the key is expressed as a predetermined code, the predetermined code comprising a predetermined standard code being assigned to the at least a part of the location information according to a convention for associating codes with portions of the metadata, and a predetermined location code indicating that the index structure contains a location of an expression specifying a location of the fragment"

However, Kirk teaches wherein a string is expressed as a predetermined code value (see e.g., col. 2, II. 38-42, col. 10, I1. 14-21). The code value is assigned to the string according to a convention (e.g., 1=Texas, 2=Georgia, etc). The code is stored in lieu of the raw value (col. 10, II. 23-25). This is done to increase performance (see e.g., col. 10, I1.28-60).

Furthermore, the location information of Evain (2.3.1.1, 2.3.2) are string values, similar to Kirk's "Texas" and "Georgia" strings (see above). Moreover, Kirk teaches using a standard code to express other data (Tables 1-4, Table 2.3.2 and

"key_encoding_indicator" table on bottom of page), without actually storing the raw definition of that other data (i.e., the system is preprogrammed to understand what the code means when it sees the code). Furthermore, the "key_encoding_indicator" in Evain provides a choice of using either string values (option "00"), or using an encoded value (option "10").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Evain with an encoding scheme, such that a code would be stored (see Kirk) in lieu of an explicit location information string, and that a "descriptor" field(s) would be additionally provided for using the code(s) themselves (similar to Evain's "encoding_type" and "section_id" descriptors above). Furthermore, the encoding scheme would allow the use of a string expression (similar to option "00" above). Thus, the claimed location information can either be expressed as a standard code, or a string expression, depending on which code value is used. All code values are standardized to be understood by the computer. As such, the claim limitations would be met. The motivation would have been to increase performance for standardized data, as taught by Kirk (e.g., col. 10, ll. 28-60). Furthermore, one would desire to allow both codes and string expressions (see Evain above), to make the data structure flexible, as known to one of ordinary skill in the art. A final motivation would be to generally increase the speed of comparisons, since one of ordinary skill in the art would recognize that in comparing values for equality in a computer, numeric comparisons (comparing the "codes") are typically faster than string comparisons.

As to claim 55, Evain as applied above further teaches wherein the location information comprises location information of a fragment including the key, and location information of the key within the fragment (see XPath section above and 2.3.2).

As to claim 56, the combination of Evain/Kirk above would further teach or suggest wherein one of the location information of the fragment and the location information of the key is expressed as the predetermined code (see above discussion).

As to claim 57, the combination of Evain/Kirk above would further teach or suggest the code comprising additional information in a language for addressing parts of a markup language document (e.g., Evain's XPath), wherein the location of the fragments and key encoded as a predetermined code corresponds to a user defined type (see above).

As to claim 58, the combination of Evain/Kirk above would further teach or suggest one of the location information of the fragment and the location information of the key expressed as the predetermined code and one of the location information of the fragment and the location information of the key encoded in a language for addressing parts of a markup language document (see above).

As to claim 59, the combination of Evain/Kirk above would further teach or suggest providing values of the keys and identification information concerning the metadata corresponding to the values of the keys for locating and extracting a fragment of the metadata (see e.g. Evain's use of the XPath above, and use of handles within the fragment structure, also see above).

As to claim 60, the combination of Evain/Kirk above would further teach or suggest a sub section comprising ranges of values of the key and identification information on ones of the fragments of metadata corresponding to the values of the key (e.g., Evain 2.3.4), and a section comprising representative key values representing the respective ranges of values of the key (Evain 2.3.3).

As to claim 61, the combination of Evain/Kirk above would further teach or suggest wherein the list includes identification information on the section, and identification information on the subsection (Evain, 2.3.2 - 2.3.4).

As to claim 62, the combination of Evain/Kirk above would further teach or suggest wherein each of the representative key values is a value among the corresponding range of values of the key (Evain, 2.3.2 - 2.3.4).

As to claim 63, Evain teaches the following claimed subject matter:

Limitation (i) addressed above;

a key index list section (fig. 2, 2.3.2) comprising a list of keys corresponding to fields of metadata and location information for defining the keys and extracting fragments of the metadata (see above, and sec. 2.2-2.4), a key index section (fig. 2, 2.3.3), and a sub key index section (fig. 2, 2.3.4);

Wherein for a key of the key index list:

The sub key index section comprises ranges of values of the key (2.3.3, 2.3.4) and identification information on ones of the fragments of the metadata corresponding to the values of the key (see table in 2.3.4, e.g., "target_handle", 2.2.2, 2.2.4);

The key index section comprises representative key values representing the respective ranges of values of the key (2.3.3). Also see above discussion of similar claimed subject matter.

Evain does not expressly teach (A) discussed above.

However, it would have been obvious to have (A). See above discussion.

As to claim 64, Evain as applied above further teaches wherein the location information comprises location information of a fragment including the keys, and location information of the keys within the fragment (see XPath section above and 2.3.2).

As to claim 65, Evain as applied above further teaches comprising a corresponding key index section and a corresponding sub key index section for another key of the key index list (2.3.2-2.3.4).

As to claim 66, Evain as applied above further teaches wherein the key index list section further comprises identification information on the key index section and the key index section further comprises identification information on the sub key index section (2.3.2 - 2.3.4).

As to claim 67, Evain teaches the following claimed subject matter:

Limitation (i) above;

A list of keys corresponding to fields of the metadata (2.2.2, 2.3.1.1, 2.3.2);

Location information for defining a key (see XPath section 2.3.1.1, 2.3.2, also see above).

Values of the keys and identification information concerning the metadata corresponding to the values of the keys for locating and extracting a fragment of the metadata (see e.g. Evain's use of the XPath above, and use of handles within the fragment structure, also see above).

Evain does not expressly teach (A) discussed above.

However, it would have been obvious to have (A). See above discussion.

As to claim 68, Evain as applied above further teaches wherein the identification information comprises identification information on the fragments of the metadata corresponding to the values of the keys (e.g., 2.3, XPath, Key Index).

As to claim 69, Evain as applied above further teaches wherein the metadata has the structure of metadata as defined by the TV Anytime Forum (see e.g., Evain, introduction, 2.3.1.1,2.3.5).

Claim 70 is rejected on the same basis as claim 54 above.

As to claim 71, Evain teaches the following claimed subject matter:

Limitation (i) addressed above, including "the index provided to search the metadata" (see throughout Evain);

Providing a key index list section (fig. 2, 2.3.2) comprising a list of keys corresponding to fields of metadata and location information for defining the keys and locating and extracting a fragment of the metadata (see above, and sec. 2.2-2.4), a key index section (fig. 2, 2.3.3), and a sub key index section (fig. 2, 2.3.4);

Wherein for a key of the key index list:

The sub key index section comprises ranges of values of the key (2.3.3, 2.3.4)

and identification information on ones of the fragments of the metadata corresponding

to the values of the key (see table in 2.3.4, e.g., "target_handle", 2.2.2, 2.2.4);

The key index section comprises representative key values representing the

respective ranges of values of the key (2.3.3). Also see above discussion of similar

claimed subject matter.

Evain does not expressly teach (A) discussed above.

However, it would have been obvious to have (A). See above discussion.

Claim 72 is rejected on the same basis as claim 67 above.

As to claims 73, 75, 77, 79, 81, and 83, Evain further teaches wherein the

location information to which the predetermined code is assigned corresponds to a path

from a root node in the metadata to a metadata fragment containing the key (see Sec.

2.3.1.1).

As to claims 74, 76, 78, 80, 82, and 84, Evain further teaches wherein the

location information is an XPath expression (e.g., see sec. 2.3.1.1).

As to claim 85, Evain teaches the claimed subject matter including:

Limitation (i) as discussed above;

As to "transmitted from provider to receiver", see sec. 2.1.5, 2.3.1.1, 2.3.2, and

note that the data has to be transmitted from a provider to a receiver for the system to

be functional in a computing environment. See previous Action.

Evain does not expressly teach comprising a "fragment type" field containing an

encoded value assigned to a standard fragment type specifying a location of the

fragment, wherein the encoded value is assigned to the standard fragment type according to a convention for specifying standard fragment types and a key descriptor field containing location information specifying a location of a key for the index relative to the location of the fragment indicated by the fragment type field.

The above is drawn to substantially the same subject matter as (A) above. Also note that Evain already provides location information of the fragment and location information of the key relative to the fragment (see above), and both are string values.

See above discussion for (A) for the reasoning and motivation to combine.

As such, Evain and Kirk teach the claimed subject matter.

As to claim 86, the combination of Evain/Kirk above has to assign the encoded value to the predefined string (assigning "1" to Texas") prior to creating a container containing the index structure for transmission or else the use of the code would be meaningless.

As to claim 87, the combination of Evain/Kirk above would further teach or suggest wherein the predefined string specifying the fragment location is a path from a root node in the metadata to a metadata fragment containing the key (see Evain's XPath 2.3.1.1).

As to claim 88, Evain as applied above further teaches the claimed subject matter (see XPath section above).

As to claim 89, Evain as applied above would have the structure of metadata as defined by the TV Anytime Forum (see e.g., introduction, 2.3.1.1, 2.3.5).

Conclusion

Applicant's arguments were fully considered but were not persuasive.

Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP 706.07(a). Applicant is

reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Charles E. Lu whose telephone number is (571) 272-

8594. The examiner can normally be reached on 8:30 - 5:00; M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Apu Mofiz can be reached at (571) 272-4080. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

/Charles E Lu/
Examiner, Art Unit 2161
11/20/2008

/Apu M Mofiz/

Supervisory Patent Examiner, Art Unit 2161